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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,548	08/30/2001	Xingxi Zhou	0425-0851P	7901
2292 7590 09/10/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER MCDONOUGH, JAMES E	
			ART UNIT	PAPER NUMBER
			1755	
			NOTIFICATION DATE	DELIVERY MODE
			09/10/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

09/914,548

Applicant(s)

ZHOU ET AL.

Examiner

James E. McDonough

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23, 24, 29, 30, 34, 39, 40, 50-52, 65, 67-69, 73 and 75-77 is/are pending in the application.
- 4a) Of the above claim(s) 50-52, 65, 69, 76 and 77 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23, 24, 29, 30, 34, 39, 40, 67, 68, 73, and 75 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Newly submitted claims 76 and 77 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The original claims are drawn to a composition the newly added claims are drawn to an article

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 76 and 77 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Original Rejections

Claims 23, 24, 29, 30, 34, 39, 40, 73, and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes et al(5,608,183) in view of Timmerman (3,902,934).

Barnes et al discloses a gas generating composition that comprises 58.9 % of basic copper nitrate, 41.1 % of guanidine nitrate, and 5.3 % guar gum as a binder. The composition is extruded into long strands with a single perforation and then chopped. See Example 2. The weight loss ratio, concentration of trace gases or maximum internal pressure are inherent properties of this composition. As to limitations which are considered to be inherent in a reference, note the case law of In re Ludke, 169 USPQ 563; In re Swinehart, 169 USPQ 226, In re Fitzgerald, 205 USPQ 594; In re Best et al,

Art Unit: 1755

195 USPQ 430; and In re Brown, 173 USPQ 685,688. The oxidizer size is not disclosed.

Timmerman teaches that it is known to decrease particle size of oxidizer to lower than 25 micron in order to allow for complete reaction of the oxidizer (col. 2, lines 35-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the size of the oxidizer since Timmerman suggests that sizes lower than 25 micron will allow for complete reaction of the oxidizer and to prevent unreacted particles from being ejected with the gaseous reaction products. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

Claims 23, 24, 29, 30, 34, 39, 40, 73, and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall (5,841,065) in view of Timmerman (3,902,934).

Mendenhall discloses a gas generating composition that comprises 40.3 % of basic copper nitrate, 15.7 % of guanidine nitrate, and 5.7 % guar gum as a binder. See Example. The weight loss ratio, concentration of trace gases or maximum internal pressure are inherent properties of this composition. As to limitations which are considered to be inherent in a reference, note the case law of In re Ludke, 169 USPQ 563; In re Swinehart, 169 USPQ 226, In re Fitzgerald, 205 USPQ 594; In re Best et al, 195 USPQ 430; and In re Brown, 173 USPQ 685, 688.

Timmerman teaches that it is known to decrease particle size of oxidizer to lower than 25 micron in order to allow for complete reaction of the oxidizer (col. 2, lines 35-50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the size of the oxidizer since Timmerman suggests that sizes lower than 25 micron will allow for complete reaction of the oxidizer and to prevent unreacted particles from being ejected with the gaseous reaction products. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

Claims 67, 68, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barnes et al (5,608,183) in view of Timmerman (3,902,934) as applied to claims above 23, 24, 29, 30, 34, 39, 40, 73, and 75, and further in view of Matsuda et al (5,780,767) or Zhou (6,468,369) or Seeger (5,834,679).

Matsuda, Zhou, and Seeger teach the use of a sodium salt of carboxymethylcellulose for use as a binder with explosive compositions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute sodium carboxymethylcellulose for the guar gum disclosed by Barnes et al since they are both known water soluble binders and would have the same result on the gas generating composition and since Matsuda, Zhou, and Seeger all teach that sodium carboxymethylcellulose is a known binder for gas generating compositions.

Art Unit: 1755

Claims 67, 68, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall(5,841,065) in view of Timmerman (3,902,934) as applied to claims above 23, 24, 29, 30, 34, 39, 40, 73, and 75, and further in view of Matsuda et al(5,780,767) or Zhou (6,468,369) or Seeger (5,834,679)..

Matsuda, Zhou, and Seeger teach the use of a sodium salt of carboxymethylcellulose for use as a binder with explosive compositions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute sodium carboxymethylcellulose for the guar gum disclosed by Mendenhall since they are both known water soluble binders and would have the same result on the gas generating composition and since Matsuda, Zhou, and Seeger all teach that sodium carboxymethylcellulose is a known binder for gas generating compositions.

Response to Arguments

Applicant's arguments starting on page 8 under "The invention" that they achieve unexpected results because of mixing the reagents in the presence of water. This is found not persuasive for at least the following reasons 1.) The alleged superior result are approximately 11-13 cm/millisecond, where with out water they are about 8-10 cm/millisecond, applicants are reminded that about 10 reads directly on approximately 11, therefore these results are not superior. 2.) The results are not fully commensurate with the scope of the claims. 3.) None of the examined claims require the use of water as a solvent, and although claims are read in light of the specification, limitations from the specification are not read into the claims. 4.) This is a product-by-process limitation,

Art Unit: 1755

and does not serve to patentably distinguish the instant application over the prior art. 5.)

When mixing reagent with solvent one skilled in the art would expect this to produce a more intimate contact between the reagents, which the skilled artisan would appreciate would increase the combustion rate, so even if it could be argued that the results are superior, which they are not, they still would not be unexpected.

Applicants argue against the Barnes in view of Timmerman rejection. The first argument against this rejection is a piece meal analysis of the references. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants further argue that the references do not use the same motivation for the combination, applicants are reminded that the reference do not have to disclose the same motivation fort a limitation to read on claimed subject matter.

Applicants further argue that the skilled artisan would not be able to determine the appropriate particle size. This is found not persuasive because particle size is considered to be a result effective variable. With respect to result effective variables MPEP 2144.05 [R-5] states:

Art Unit: 1755

A. Optimization Within Prior Art Conditions or Through Routine Experimentation

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382 (“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.”); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.). For more recent cases applying this principle, see *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).

Applicants argue against the Mendenhall in view of Timmerman rejection. Their arguments against this rejection are the same as above for the Barnes in view of Timmerman rejection, and they unpersuasively argue against the combination disclosing the particle size.

Applicants argue against the rejection of claims 67, 68, and 73, however all of these arguments amount to piecemeal analysis of the references. In response to applicant's arguments against the references individually, one cannot show

Art Unit: 1755

nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants then try to argue about the alleged unexpected results, which were shown above to not be either unexpected or superior.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. McDonough whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

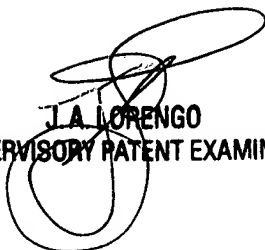
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 09/914,548
Art Unit: 1755

Page 9

JEM 8/23/2007



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SUPERVISORY PATENT EXAMINER